British Phycological Journal

Index and Contents to Volume 23
March—December 1988

Published for the
British Phycological Society
by Academic Press
London San Diego New York
Boston Sydney Tokyo Toronto

Copyright © 1988, by The British Phycological Society

ALL RIGHTS RESERVED

No part of this volume may be reproduced in any form, by photostat, microfilm, or any other means, without written permission from the publishers.

BRITISH PHYCOLOGICAL JOURNAL

CONTENTS AND INDEX TO

VOLUME 23

The Council of the British Phycological Society wish it to be understood that they do not accept responsibility for the accuracy of statements published in the *Journal*, excepting when those statements are contained in an official report of the Council.

Number 1, pp. 1–100. 1 March 1988
Number 2, pp. 101–204. 1 June 1988
Number 3, pp. 205–298. 1 September 1988
Number 4, pp. 299–406. 1 December 1988

Page

AFONSO-CARRILLO, J.
Structure and reproduction of *Spongites wildpretii* sp. nov. (Corallinaceae, Rhodophyta) from the Canary Islands, with observations and comments on *Spongites absimile* comb. nov. 89

AL AMOUDI, O. A., ALI, A. Y., BLUNDEN, G. and SMITH, B. E.
Betaines and tertiary sulphonium compounds from Saudi Arabian marine algae 399

ALI, A. Y., *see* AL AMOUDI, ALI, BLUNDEN and SMITH 399

ARCHIBALD, P. A.
Chlorococcum pamirum and *C. salinum*, two new species of the Chlorophyceae from Central Asia 121

ATHANASIADIS, A.
The status and typification of *Antithamnion cruciatum* var. *pumilum* and its relationship to *A. cruciatum* var. *scandinavicum* (Rhodophyta) 395

BLUNDEN, G., *see* AL AMOUDI, ALI, BLUNDEN and SMITH 399

BOX, J. D.
Cryopreservation of the blue-green alga *Microcystis aeruginosa* 385

BRODIE, J. and GUIRY, M. D.
Life history and reproduction of *Cordylecladia erecta* (Rhodymeniaceae, Rhodophyta) 347

BROOK, A. J. and WILLIAMSON, D. B.
Closterium arcus sp. nov., a new British desmid 391

BURTON, P., *see* LEWIS and BURTON 49

CANNELL, R. J. P., OWSIANKA, A. M. and WALKER, J. M.
Results of a large-scale screening programme to detect antibacterial activity from freshwater algae 41

CANNELL, R. J. P., *see* KELLAM, CANNELL, OWSIANKA and WALKER 45

CASTENHOLZ, R. W., *see* DODDS and CASTENHOLZ 219

CHAMBERLAIN, Y. M., IRVINE, L. M. and WALKER, R.
A redescription of *Lithophyllum crouanii* (Rhodophyta, Corallinales) in the British Isles with an assessment of its relationship to *L. orbiculatum* 177

CMIECH, H. A., LEEDALE, G. F. and REYNOLDS, C. S.
Morphological and ultrastructural variability of planktonic Cyanophyceae in relation to seasonal periodicity. IV. *Aphanizomenon flos-aquae*: vegetative cells, heterocysts, akinetes 239

COESEL, P. F. M . and MENKEN, B. J.
Biosystematic studies on the *Closterium moniliferum/ehrenbergii* complex (Chlorophyta, Conjugatophyceae) in Western Europe. I. Isozyme patterns 193

CROOME, R. L., LING, H. U. and Tyler, P. A.
Dinobryon unguentariforme (Chrysophyceae), a new species from Australia 129

DAFT, M. J. *see* FALLOWFIELD and DAFT 317

DAWSON, N. S., DUNLAP, J. R. and WALNE, P. J.
Structure and elemental composition of pellicular warts of *Euglena spirogyra* (Euglenophyceae) 61

DEMOULIN, V., *see* WILMOTTE and DEMOULIN 259

DEMOULIN, V., *see* WILMOTTE, GOFFART and DEMOULIN 251

DE OLIVEIRA, F., *see* PLASTINO and DE OLIVEIRA 267

DODDS, W. K. and CASTENHOLZ, R. W.
Effects of grazing and light on the growth of *Nostoc pruniforme* (Cyanobacteria) 219

DUNLAP, J. R., *see* DAWSON, DUNLAP and WALNE 61

EGAN, P. R., *see* TRAINOR and EGAN 135

FALLOWFIELD, H. J. and DAFT, M. J.
The extracellular release of dissolved organic carbon by freshwater cyanobacteria and algae and the interaction with *Lysobacter* CP-1 317

FELGENHAUER, B. E., *see* PRASAD and FELGENHAUER 365

GALATIS, B., *see* KATSAROS and GALATIS 71

GOFFART, A., *see* WILMOTTE, GOFFART and DEMOULIN 251

GUIRY, M. D., *see* BRODIE and GUIRY 347

HALLAM, N. D. and LUFF, S. E.
The fixation and infiltration of larger brown algae (Phaeophyta) for electron microscopy 337

HAWKES, M. W.
Evidence of sexual reproduction in *Smithora naiadum* (Erythropeltidales, Rhodophyta) and its evolutionary significance 327

HICKEL, B. and POLLINGHER, U.
Identification of the bloom-forming *Peridinium* from Lake Kinneret (Israel) as *P. gatunense* (Dinophyceae) 115

HORIGUCHI, T. and PIENAAR, R. N.
A redescription of the tidal pool dinoflagellate *Peridinium gregarium* based on re-examination of the type material 33

INOUYE, I. and PIENAAR, R. N.
Light and electron microscope observations of the type species of *Syracosphaera, S. pulchra* (Prymnesiophyceae) 205

IRVINE, L. M., *see* CHAMBERLAIN, IRVINE and WALKER 177

JAWORSKI, G. H. M., WISEMAN, S. W. and REYNOLDS, C. S.
Variability in sinking rate of the freshwater diatom *Asterionella formosa:* the influence of colony morphology 167

JOHANSEN, J. R., *see* MCMILLAN and JOHANSEN 307

KATSAROS, CHR. and GALATIS, B.
Thallus development in *Dictyopteris membranacea* (Phaeophyta, Dictyotales) 71

KELLAM, S. J., CANNELL, R. J. P., OWSIANKA, A. M. and WALKER, J. M.
Results of a large-scale screening programme to detect antifungal activity from marine and freshwater microalgae in laboratory culture 45

LEEDALE, G. F., *see* CMIECH, LEEDALE and REYNOLDS 239

LEWIS, J. and BURTON, P.
A study of newly excysted cells of *Gonyaulax polyedra* (Dinophyceae) by electron microscopy 49

LING, H. U., *see* CROOME, LING and TYLER 129

LUFF, S. E., *see* HALLAM and LUFF 337

MCMILLAN, M. and JOHANSEN, J. R.
Changes in valve morphology of *Thalassiosira decipiens* (Bacillariophyceae) cultured in media of four different salinities 307

MENKEN, B. J., *see* COESEL and MENKEN 193

MÜLLER, D. G. and SCHMIDT, U. U.
Culture studies on the life history of *Elachista stellaris* Aresch. (Phaeophyceae, Chordariales) 153

NICHOLLS, K. H.
Descriptions of three new species of *Mallomonas* (Chrysophyceae): *M. hexagonis, M. liturata* and *M. galeiformis* 159

NORRIS, R. E.
A review of *Colacopsis* and *Melanocolax*, red algal parasites on South African Rhodomelaceae (Rhodophyta) 229

OWSIANKA, A. M., *see* CANNELL, OWSIANKA and WALKER 41

OWSIANKA, A. M., *see* KELLAM, CANNELL, OWSIANKA and WALKER 45

PEPLINSKA, A. M., *see* SYRETT and PEPLINSKA 387

PETERS, A. F.
Culture studies of a sexual life history in *Myriotrichia clavaeformis* (Phaeophyceae, Dictyosiphonales) 299

PIENAAR, R. N., *see* HORIGUCHI and PIENAAR 33

PIENAAR, R. N. *see* INOUYE and PIENAAR 205

PLASTINO, E. M. and DE OLIVEIRA, F.
Sterility barriers among species of *Gracilaria* (Rhodophyta, Gigartinales) from the São Paulo littoral, Brazil 267

POLLINGHER, U., *see* HICKEL and POLLINGHER 115

PRASAD, A. K. S. K. and FELGENHAUER, B. E.
Colony formation and valve morphology in the marine benthic diatom *Dimeregramma fulvum* 365

PUESCHEL, C. M.
Cell sloughing and chloroplast inclusions in *Hildenbrandia rubra* (Rhodophyta, Hildenbrandiales) 17

PUESCHEL, C. M.
Secondary pit connections in *Hildenbrandia* (Rhodophyta, Hildenbrandiales) 25

REYNOLDS, C. S., *see* CMIECH, LEEDALE and REYNOLDS 239

REYNOLDS, C. S., *see* JAWORSKI, WISEMAN and REYNOLDS 167

SCHMIDT, U. U., *see* MÜLLER and SCHMIDT 153

SIMONS, J., *see* VAN BEEM and SIMONS 143

SIVER, P. A.
Spiniferomonas triangularis sp. nov., a new silica-scaled freshwater flagellate (Chrysophaceae, Paraphysomonadaceae) 379

SMITH, B. E., *see* AL AMOUDI, ALI, BLUNDEN and SMITH 399

SUBBA RAO, D. V.
Species specific primary production measurements of Arctic phytoplankton 273

SYRETT, P. J. and PEPLINSKA, A. M.
The effect of nickel and nitrogen deprivation on the metabolism of urea by the diatom *Phaeodactylum tricornutum* 387

THOMSEN, H. A.
Ultrastructural studies of the flagellate and cyst stages of *Pseudopedinella tricostata* (Pedinellales, Chrysophyceae) 1

TRAINOR, F. R. and EGAN, P. F.
The role of bristles in the distribution of a *Scenedesmus* (Chlorophyceae) 135

TYLER, P. A. and WICKHAM, R. P.
Yan Yean revisited — a bicentennial window on Australian freshwater algae 105

TYLER, P. A., *see* CROOME, LING and TYLER 129

VAN BEEM, A. P. and SIMONS, J.
Growth and morphology of *Draparnaldia mutabilis* (Chlorophyceae, Chaetophorales) in synthetic medium 143

WALKER, J. M., *see* CANNELL, OWSIANKA and WALKER 41

WALKER, J. M., *see* KELLAM, CANNELL, OWSIANKA and WALKER 45

WALKER, R., *see* CHAMBERLAIN, IRVINE and WALKER 177

WALNE, P. J., *see* DAWSON, DUNLAP and WALNE 61

WICKHAM, R. P., *see* TYLER and WICKHAM 105

WILLIAMSON, D. B., *see* BROOK and WILLIAMSON 391

WILMOTTE, A. and DEMOULIN, V.
Studies of marine epiphytic algae, Calvi, Corsica. II. Seasonal variations in the populations of epiphytic blue-green algae in three harbours with different pollution loads 259

WILMOTTE, A., GOFFART, A. and DEMOULIN, V.
Studies of marine epiphytic algae, Calvi, Corsica. I. Determination of minimal sampling areas for microscopic algal epiphytes 251

WISEMAN, S. W., *see* JAWORSKI, WISEMAN and REYNOLDS 167

ABSTRACTS OF PAPERS

presented to the British Phycological Society 1988

AL-AMOUDI, O. A.,* ALI, A. Y.,* BLUNDEN, G.† and SMITH, B. E.† (*Umm Al-Qura University, Makkah, Saudi Arabia and Portsmouth Polytechnic, England)
Quaternary ammonium and tertiary sulphonium compounds in marine algae from Saudi Arabia 283

ALEXANDER, L. M. and WILKINSON, M. (Heriot-Watt University, Edinburgh, Scotland)
Studies on cadmium-binding in *Enteromorpha intestinalis* 283

BRODIE, J. and GUIRY, M. D. (University College, Galway, Ireland)
Photoperiodic responses in some species of *Chondrus* (Rhodophyta) from Japan 283

BUTLER, D. M. and EVANS, L. V. (University of Leeds, England)
Isolation of protoplasts from *Laminaria* 284

CHAMBERLAIN, Y. M. (Portsmouth Polytechnic, England)
The significance of fertile outgrowths on the crustose coralline red alga *Lithophyllum crouanii* 284

COCKCROFT, A. R., WYMAN, M. and CARR, N. G. (University of Warwick, England)
Structure of phycobilisomes in *Synechococcus* WH7803 284

CODD, G. A. (University of Dundee, Scotland)
The photoinhibition of cyanobacterial and microalgal photosynthesis 285

COLLINS, J. C. (University of Liverpool, England)
The growth of *Dunaliella* in saline environments 285

CORREA, J. A. and MCLACHLAN, J. (Atlantic Research Laboratory, Halifax, NS, Canada)
Variation in the fine structure of the cuticle of *Chondrus crispus* Stackhouse (Rhodophyta) 285

FISH, B. C., BARWELL, C. J. and ROGERS, D. J. (Portsmouth Polytechnic, England)
Separation of lectins and phycibiliproteins in extracts of *Palmaria palmata* and *Plumaria elegans* 286

FLETCHER, R. L. (Portsmouth Polytechnic, England)
Marine algae on toxic antifouling paints 286

FLYNN, K. J. (University College, Swansea, Wales)
The concept of primary production and the roles of nutrient and predator limitation in the control of production in the marine euphotic zone 286

FLYNN, K. J. and AL-AMOUDI, O. A. (University College, Swansea, Wales & University of Umm Al-Qura, Saudi Arabia)
Effects of darkness and of nitrogen deprivation on the composition of the free amino acid pool in the diatom *Phaedactylum tricornutum* 287

FOGG, G. E. (University College of North Wales, Wales)
Picoplankton: current status and prospects 287

GRAZIANO, C. (University of Liverpool, England)
The North Irish Sea: short, late phytoplankton production 287

HAFFNER, G. D. and MCNEELY, R. (University of Windsor, Canada)
Community structure in epilimnetic and metalimnetic phytoplankton populations 287

HAMEED, H. A. (University of East Anglia, Norwich, England)
A comparison of tests for physiological nutrient limitation in the growth of algae in the Trinity Broads, Norfolk 288

HAWLEY, G. R. W. and WHITTON, B. A. (University of Durham, England)
Studies on small-celled blue-green algae in fresh waters 288

HAWRYLUCK, M. D. and STEELE, D. H. (Memorial University of Newfoundland, Canada)
Seasonal changes in grazing pressure and algal community composition in Newfoundland tidepools 288

HAWRYLUK, M. D. and THATCHER, S. J. (Memorial University of Newfoundland, Canada)
Field and laboratory observations on thallus- and tube-forming diatoms 289

HOOPER, R. G. (Memorial Universtiy of Newfoundland, Canada)
Natural environmental stresses and mass mortalities in north-east North American marine communities 289

HOWARD, K. M.*†, CARR, N. G.* and JOINT, I. R.† (*University of Warwick and †Institute for Marine Environmental Research, Plymouth, England)
Physiological ecology of picoplankton in the North Sea 289

HURD, C. L. and DRING, M. J. (Queen's University of Belfast, Northern Ireland)
Phosphate uptake by *Fucus spiralis* and *Fucus serratus* 290

JAMEL AL-LAYL, K.*, ERIKSSON, J.†, POON, G. K.*, and CODD, G. A.* (*University of Dundee, Scotland and †Åbo Academy, Finland)
Peptide and alkaloid toxins in a single strain of the cyanobacterium *Anabaena flos-aquae* 290

JOCHEM, F. (Institut für Meereskunde an der Universität Kiel, Germany)
On the occurrence of autotrophic nanoflagellates in Kiel Bight 290

JOHN, D. M. and MOORE, J. A. (British Museum Natural History, England)
New features of the outer oospore wall in the Charales — are they the taxonomists' Rosetta Stone? 291

JOHN, D. M. and MOORE, J. A. (British Museum Natural History, England)
Outer wall structure and ornamentation of the charophyte oospore as revealed by SEM 291

KENNAWAY, G. M. A. and HAPPEY-WOOD, C. M. (University College of North Wales, Bangor, Wales)
Physiological ecology of picoplankton in a Welsh mountain lake 291

KRAMER, J. G.* and MORRIS, I.† (*University of Maryland, USA and †University of Warwick, England)
Growth and macromolecular synthesis in marine *Synechococcus* sp. WH7803 292

LAWTON, L. and CODD, G. A. (University of Dundee, Scotland)
Effects of cyanobacterial peptide toxins on the ciliate *Paramecium* 292

LYNCH, J. L. and EDYVEAN, R. G. J. (University of Sheffield, England)
Sea-water filtration — the effects of plankton blooms 292

MCLELLAN, D. S.*, ROGERS, D. J.*, BLUNDEN, G.*, CARABOT, A.†, MORALES, A.†, ROSQUETTE, C.† and FREDJ, M.‡ (*Portsmouth Polytechnic, England, †Universidad de los Andes, Venezuela and ‡Université de Centre, Tunisia)
Antihaemostatic agents from Venezuelan and Tunisian algae 293

MCLELLAN, M. R. (Culture Collection of Algae and Protozoa, Windermere, England)
A cryomicroscopic study of *Fragilaria crotonensis* during freezing and thawing 294

MAGGS, C. A. (Atlantic Research Laboratory, Halifax, NS, Canada)
A karyological study of life in *Gymnogongrus* and *Mastocarpus* (Rhodophyta) 293

MASON, T. and BLUNDEN, G. (Portsmouth Polytechnic, England)
Compounds of algal origin as alleviators of osmotic stress 293

MOORE, J. A. (British Museum Natural History, England)
Lamprothamnium — a pioneer in algal conservation 294

PRIESTLEY, I. M.*, CODD, G. A.*, BEATTIE, K. A.*, HUNT, S. M.† and FAWELL, J. K.† (*University of Dundee, Scotland and †WRC Environment, Medmenham, England)
In vitro screening of cyanobacterial blooms for toxicity 294

PRUD'HOMME VAN REINE, W. F. (Rijksherbarium, Leiden, The Netherlands)
Biogeography of Macaronesian seaweeds 295

RAVEN, J. A.* and SAMUELSSON, G.† (*University of Dundee, Scotland and †University of Umeå, Sweden)
Ecophysiology of *Fucus vesiculosus* L. at its northern limit in the Gulf of Bothnia 295

REED, R. H. (University of Dundee, Scotland)
Salinity stress — the shocking truth 295

ROGERS, D. J.*, FISH, B. C.*, BLUNDEN, G.*, FARNHAM, W. F.*, CARABOT, A.†, MORALES, A.†, ROSQUETE, C.† and FREDJ, M.‡ (*Portsmounth Polytechnic, England, †Universidad de los Andes, Venezuela and ‡Université de Centre, Tunisia)
Lectins from Venezuelan and Tunisian algae 296

SMITH, M. A. (Goldsmiths' College, University of London, England)
Acid phosphatase activity in the diatom *Astrionella formosa* under aluminium stress 296

SUTTON, G. D. and TOLLERVEY, A. G. (Department of Fisheries, Sabah, Malaysia)
Experiments on the cultivation of *Eucheuma striatum* in Malaysia 297

TITTLEY, I.*, HOPPER, R.† and FARNHAM, W. F.‡ (*British Museum Natural History, England, †Memorial University of Newfoundland, Canada and ‡Portsmouth Polytechnic, England)
Seaweed communities of southern Newfoundland 297

VYMAZAL, J. (Water Research Institute, Prague, Czechoslovakia)
The influence of pH on heavy metal uptake by *Cladophora glomerata* 297

WALLS, V. C., GALLON, J. R. and SYRETT, P. J. (University College of Swansea, Wales)
Attempts to distinguish between members of the prokaryotic and eukaryotic picoplankton 297

WYMAN, M. and CARR, N. G. (Department of Biological Sciences, University of Warwick, England)
Control of nitrogen metabolism in *Synechococcus* sp. WH7803 298

BOOK REVIEWS

Algal Cultures and Phytoplankton Ecology. By G. E. FOGG and BRENDA THAKE 403

Atlas and Catalogue of the Diatom Types of Friedrich Hustedt. By R. SIMONSEN 403

Chrysophytes: Aspects and Problems. By J. KRISTIANSEN and R. A. ANDERSEN (editors) 199

Ecology of Microbial Communities. Society for General Microbiology Symposium 41. By M. FLETCHER, T. R. G. GRAY and J. G. JONES 202

Handbook of Phycological Methods Ecological Field Methods: Macroalgae. By M. M. LITTLER and D. S. LITTLER (editors) 103

Light and Photosynthesis in Aquatic Ecosystems. By J. T. O. KIRK 104

Proceedings of the Eighth International Diatom Symposium, Paris, 1984 203

Seaweeds of the British Isles, Vol. 3, Fucophyceae (Phaeophyceae), Part 1. By R. L. FLETCHER 200

Seaweeds of the British Isles. Vol. 4. Trybophyceae (Xanthophyceae). By T. CHRISTENSEN 103

Taxonomy and Biogeography of Macquarie Island Seaweeds. By R. W. RICKER 201